



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/578,421	05/05/2006	Ki Ju Kang	P/4761-4	1653
2352	7590	09/15/2009	EXAMINER	
OSTROLENK FABER GERB & SOFFEN 1180 AVENUE OF THE AMERICAS NEW YORK, NY 100368403			KENNY, DANIEL J	
ART UNIT	PAPER NUMBER			
	3633			
MAIL DATE	DELIVERY MODE			
09/15/2009	PAPER			

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/578,421	<b>Applicant(s)</b> KANG ET AL.
	<b>Examiner</b> DANIEL KENNY	<b>Art Unit</b> 3633

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If no period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 05 May 2009.  
 2a) This action is FINAL.      2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-16 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-7 and 9-15 is/are rejected.  
 7) Claim(s) 8 and 16 is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892)  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) Information Disclosure Statement(s) (PTO-1668)  
 Paper No(s)/Mail Date \_\_\_\_\_

4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date \_\_\_\_\_

5) Notice of Informal Patent Application  
 6) Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

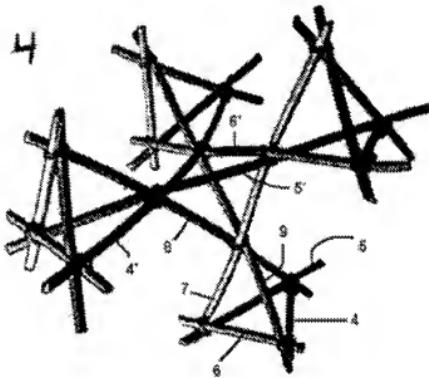
**Claims 1-6 - are rejected under 35 U.S.C. 103(a) as being unpatentable over Snelson (6,739,937) in view of Barlow (4,271,628).**

Snelson discloses a structure (Fig. 4 below) comprising:

*Claim 1 - a) a first tetrahedron member formed of a first to sixth wires, the first tetrahedron member being constructed in such a manner that the first wire (4), the second wire (5), and the third wire (6) are intercrossed in a plane to form a triangle, the fourth wire (7) is intercrossed with the intersection point of the second wire and the third wire, the fifth wire (8) is intercrossed with the intersection point of the first wire and the second wire, and the sixth wire is intercrossed with the intersection point of the third wire and the first wire, the fourth wire, the fifth wire, and the sixth wire (9) being intercrossed with one another at a single reference intersection point; and*

*b) a second tetrahedron member contacted with the first tetrahedron member at the reference intersection point and having a similar shape to the first tetrahedron member, the second tetrahedron member being constructed in such a manner that the fourth wire, the fifth wire, and the sixth wire pass the reference intersection point and extend further, each of a group of wires (4', 5', 6') is intercrossed with two wires*

selected from the extended fourth, fifth and sixth wires, the group of wires being in parallel with the first wire, the second wire, and the third wire respectively; and and the unit cell is repeated in a three-dimensional pattern, thereby forming a wire (or rod)-woven truss-type structure.



Annotated Fig. 4 (6,739,937)

Barlow discloses that it is old in the art to form regular tetrahedron structures, wherein the forming elements are intercrossed with each other at 60 degrees or 120 degrees, and the unit cell is repeated in a three-dimensional pattern, thereby forming a truss-type structure.

It would have been obvious to one of ordinary skill in the art at the time the present invention was made to include the regular tetrahedron structures taught by Barlow to form "complex geometrical structures" (col. 1, line 26), which helps achieve the Snelson goal of forming "more challenging" three dimensional space frame objects.

Claim 2 - Among the six groups of orientational wires, three groups of orientational wires forming a vertex of the first or second regular tetrahedron member are intercrossed clockwise or counterclockwise when seen from the front of the vertex.

Claims 3 and 4 – The Barlow first and second regular tetrahedron members have a similarity ratio of 1:1. (Fig. 20 - 6)

Claim 5 – The wires are any one selected from the group consisting of metal, ceramics, synthetic resin, and fiber-reinforced synthetic resin.

Claim 6 - The intersection point of the wires is bonded by any one selected from the group consisting of a liquid- or spray-form adhesive, brazing, soldering, and welding.

**Claim 7- is rejected under 35 U.S.C. 103(a) as being unpatentable over Snelson in view of Barlow and in further view of Constantinesco (2,677,955).**

Constantinesco discloses that it is old in the art to manufacture a reinforced composite material manufactured by filling with a resin, the empty space of a three-dimensional wire cellular light structure. It would have been obvious to one of ordinary skill in the art at the time the present invention was made to manufacture a reinforced composite material manufactured by filling with a resin, the empty space of a three-dimensional wire cellular light structure as taught by Constantinesco using the claim 1

three-dimensional wire-woven cellular light structure of Snelson to have "a final product that, after setting and hardening, is a new material with an increased resistance to compression" (col. 3, line 20), such a permanent final product being "for display" (col. 1, line 63).

**Claim 9-15 – are rejected under 35 U.S.C. 103(a) as being unpatentable over Snelson in view of Barlow and in further view of Constantinesco.**

Claim 9-15 are an obvious method of using the device(s) of the above claims.

#### ***Allowable Subject Matter***

Claims 8 and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Response to Arguments***

Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

#### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANIEL KENNY whose telephone number is (571)272-9951. The examiner can normally be reached on Mon-Fri. 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Chilcot can be reached on 571 272 6777. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jeanette E Chapman/  
Primary Examiner, Art Unit 3633

/D. K./  
Examiner, Art Unit 3633